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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,828	09/24/2003	Ian Clarke	EETP002	6992

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EPSON RESEARCH AND DEVELOPMENT INC  
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EXAMINER
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COUSO, YON JUNG

ART UNIT	PAPER NUMBER
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2624

MAIL DATE	DELIVERY MODE
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07/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/669,828

Applicant(s)

CLARKE ET AL.

Examiner

Yon Couso

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-25, 32-37, 39-50 is/are allowed.
- 6) ☒ Claim(s) 26-31 and 38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. Applicant's arguments filed May 24, 2007 have been fully considered but they are not persuasive.

a. In view of the amendment and the arguments presented by the applicants, the rejections made to claims 1-25 and 32-37 have been withdrawn.

b. The applicants argue that Xiong does not register images based on matching corners in the images, use the matching corners to estimate transforms, re-estimate the transforms using non-moving pixels and error correct the projections using the matching corners. The examiner disagrees. Xiong teaches a method of creating a panorama image from a series of source images comprising the steps of: registering matching corners in each adjoining pair of images in the series (column 10, lines 9-16; and column 14, lines 2-6); using the registered matching corners to estimate transforms detailing the transformation between each adjoining pair of images (column 10, line 16-column 12, line 31 and column 14, lines 46-48); re-estimating the transforms using non-moving pixels in the adjoining pairs of images (column 12, line 32-column 13, line 67); multiplying selected transforms to project each image onto the center image of the series and error correcting the projections using the registered matching corners (column 12, line 32-column 13, line 67); and frequency blending the overlapping regions of the projected images to yield the panorama image (abstract, lines 19-24; column 7, line 47-column 8, line 17; and column 14, line 1-column 16, line 7).

2. Claims 26-31 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Xiong (US Patent No. 6,359,617).

As for claim 26, Xiong teaches a method of creating a panorama image from a series of source images comprising the steps of: registering matching corners in each adjoining pair of images in the series (column 10, lines 9-16; and column 14, lines 2-6); using the registered matching corners to estimate transforms detailing the transformation between each adjoining pair of images (column 10, line 16-column 12, line 31 and column 14, lines 46-48); re-estimating the transforms using non-moving pixels in the adjoining pairs of images (column 12, line 32-column 13, line 67); multiplying selected transforms to project each image onto the center image of the series and error correcting the projections using the registered matching corners (column 12, line 32-column 13, line 67); and frequency blending the overlapping regions of the projected images to yield the panorama image (abstract, lines 19-24; column 7, line 47-column 8, line 17; and column 14, line 1-column 16, line 7).

As for claim 27, Xiong teaches during the frequency blending, different frequency content of the overlapping regions are blended with differing weighting functions (column 7, line 47-column 8, line 17).

As for claim 28, Xiong teaches during the estimating and re-estimating, projective transforms are estimated (column 12, line 32-column 13, line 67).

As for claim 29, Xiong teaches during the estimating if projective transforms having an accuracy above a threshold cannot be determined, translations are estimated and re-estimated (column 12, line 32-column 13, line 67).

As for claim 30, Xiong teaches during the estimating and re-estimating, affine transforms are estimated (column 12, line 32-column 13, line 67).

As for claim 31, Xiong teaches during the estimating if projective transforms having an accuracy above a threshold cannot be determined, translations are estimated and re-estimated (column 12, line 32-column 13, line 67).

As for claim 38, Xiong teaches a computer readable medium embodying a computer program for creating a panorama image from a series of source images, the computer program including: computer program code for registering matching corners in each adjoining pair of images in the series (abstract, lines 16-20; column 10, lines 9-16; and column 14, lines 2-6); computer program code for using the registered matching corners to estimate transforms detailing the transformation between each adjoining pair of images (column 10, line 16-column 12, line 31 and column 14, lines 46-48); computer program code for re-estimating the transforms using nonmoving pixels in the adjoining pairs of images (column 12, line 32-column 13, line 67); computer program code for multiplying selected transforms to project each image onto the center image of the series and error correcting the projections using the registered matching corners (column 12, line 32-column 13, line 67); and computer program code for frequency blending the overlapping regions of the projected images to yield the panorama image (abstract, lines 19-24; column 7, line 47-column 8, line 17; and column 14, line 1-column 16, line 7).

3. Claims 1-25, 32-37, 39-50 are allowed.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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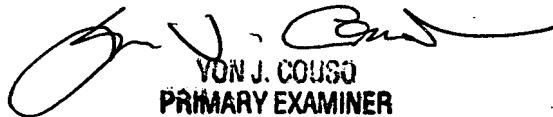
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yon Couso whose telephone number is (571) 272-7448. The examiner can normally be reached on Monday through Friday from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis, can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YJC  
July 5, 2007



YON J. COUSO  
PRIMARY EXAMINER